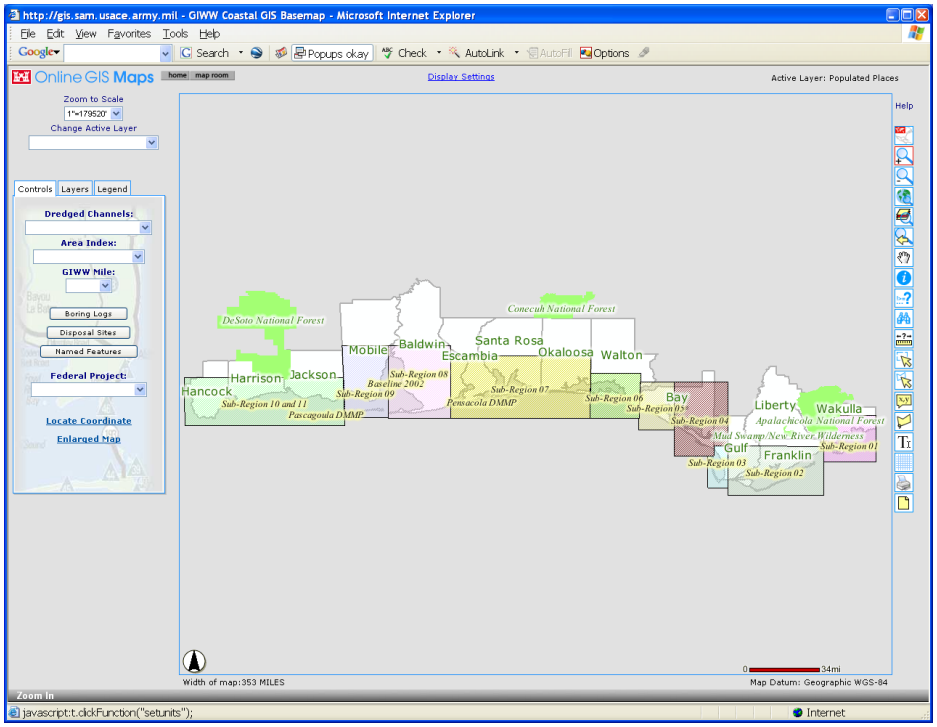
Online Mapping Using ArcIMS

Lecture	Introduction: What is ArcIMS?
Exercise 1	Components of the eCoastal ArcIMS Interface
Exercise 2	Working with Data Layers
Exercise 3	Using the View Navigation Tools
Exercise 4	Using the ArcIMS Tools
Exercise 5	Using the Selection and Find Tools
Exercise 6	Creating a Custom Map Online

Using the ArcIMS Interface

ArcIMS (standing for ArcInternet Map Server) is an online mapping product produced by ESRI. It is a GIS that is designed to serve maps across the Internet. Sometimes these maps are just static images allowing simple panning and zooming, whilst others are more complex pages. Examples of interactive maps served with ArcIMS include maps with layers that can be turned on and off, or with features containing attributes that can be queried.



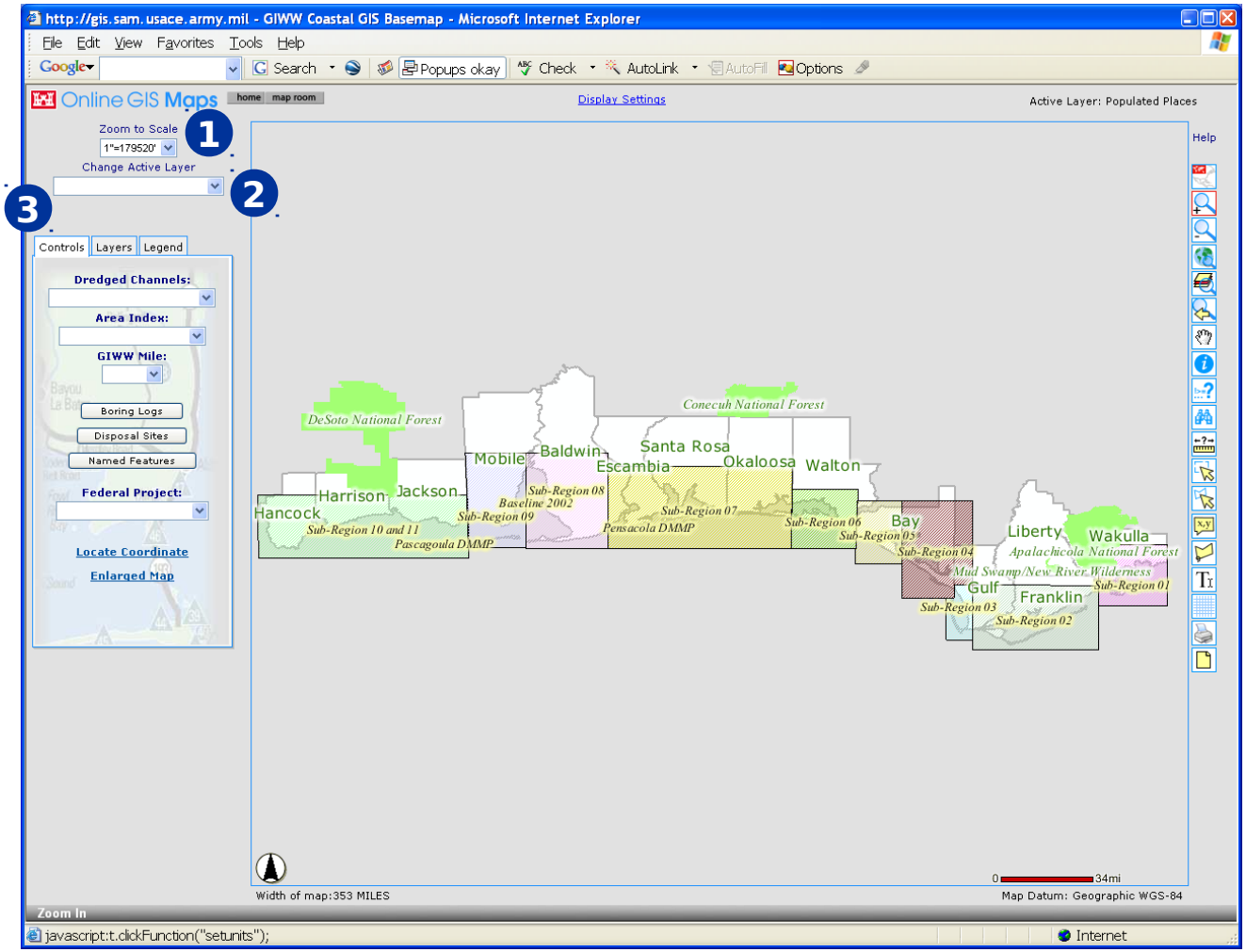
ArcIMS allows all users access to data stored in the geodatabase. Using a web accessible interface, users can view data and do simple map analysis using the tools provided.

No software licenses are required of the users and only internet access is required!

Using the ArcIMS Interface

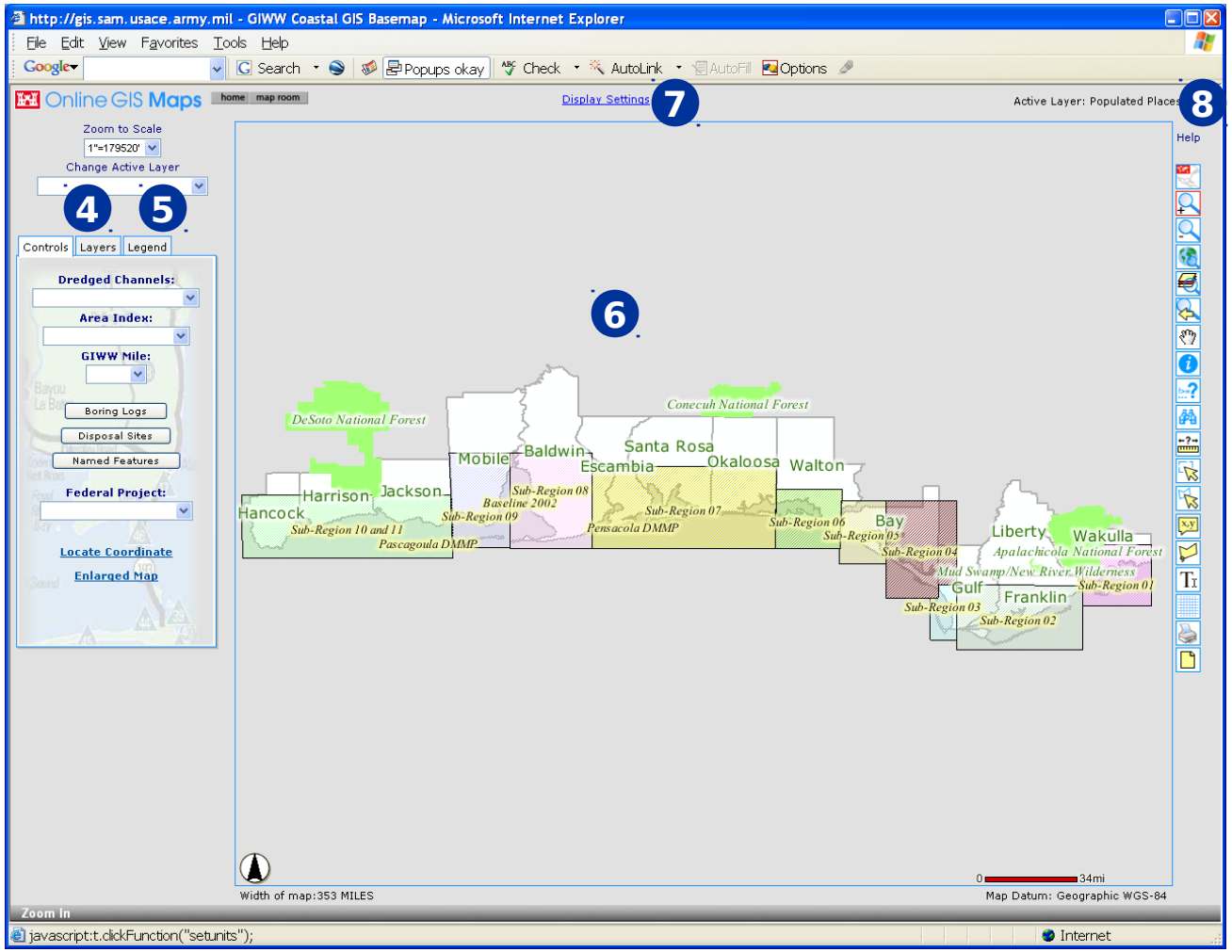
Components of the Interface:

1. **Zoom to Scale**
   To zoom to a pre-defined scale, select the desired map scale from the option box. The mapping display will automatically be adjusted.
2. **Change Active Layer**
   Some tools available in the GIS Tools, require the user to first select an active layer. To change an active layer, select the desired layer from this box. The active layer is always displayed in the upper-right corner.
3. **Control frame**
   This frame holds any custom tools developed for the web mapping application.



Using the ArcIMS Interface

1. **Layers frame**
   This frame is used to toggle data layers and labels in the mapping display.
2. **Legend frame**
   To view the map symbology, view the details of the Legend frame.
3. **Display Settings**
   By following this link, the user can modify the display settings, such as map units, of the mapping display.
4. **Mapping Display**
   The mapping display is a dynamic map that is generated with each mapping command.
5. **GIS Tools**
   These tools are provided to allow users to navigate and do simple map analysis.

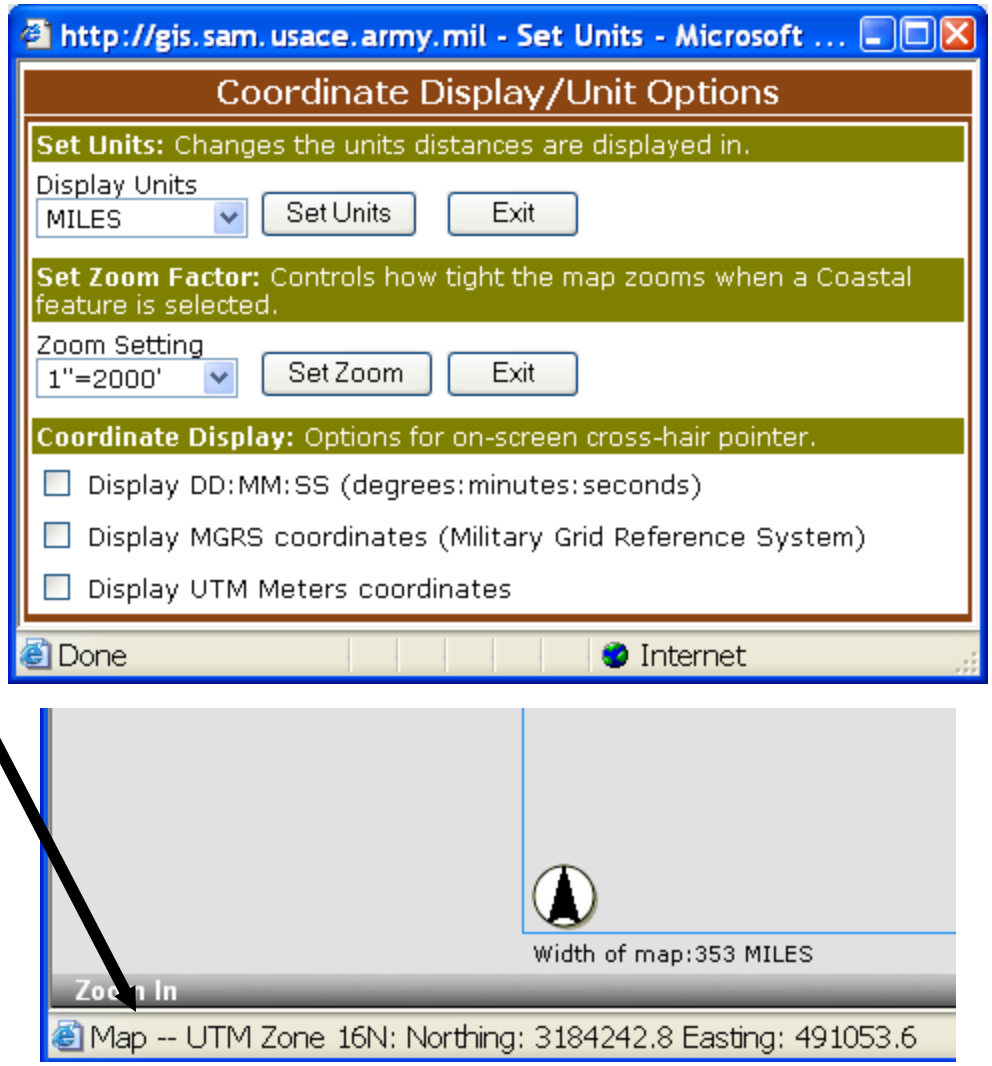


Changing the Display Settings

The Display Settings form is provided to allow the user to change the default display options in the mapping display.

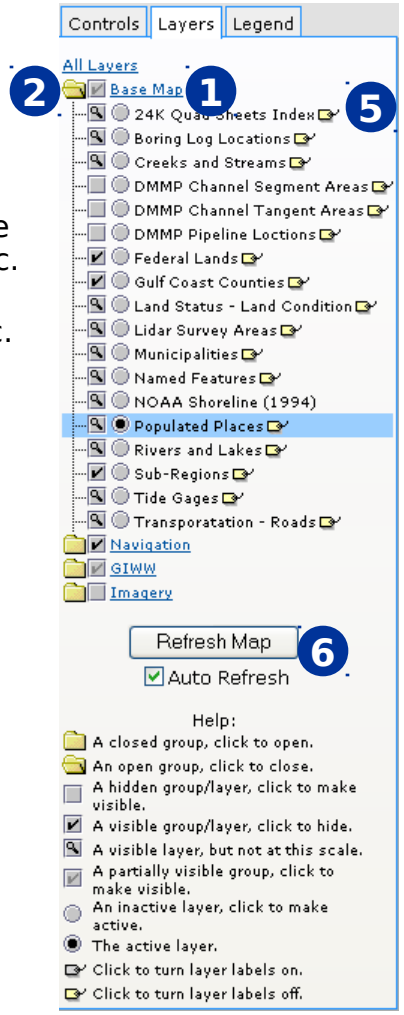
The Display Units are used when measuring distances, using the GIS Tools, on the map. The selected units are also visible near the status bar area displaying the 'width of the map'.

The Coordinate Display affects how coordinate information is displayed in the status bar area (lower-left corner) of the mapping environment.


http://gis.sam.usace.army.mil - Set Units - Microsoft ...
Coordinate Display/Unit Options
Set Units: Changes the units distances are displayed in.
Display Units
MILES
Set Units
Exit
Set Zoom Factor: Controls how tight the map zooms when a Coastal feature is selected.
Zoom Setting
1"=2000'
Set Zoom
Exit
Coordinate Display: Options for on-screen cross-hair pointer.
Display DD:MM:SS (degrees:minutes:seconds)
Display MGRS coordinates (Military Grid Reference System)
Display UTM Meters coordinates
Done
Internet
Width of map:353 MILES
Map -- UTM Zone 16N: Northing: 3184242.8 Easting: 491053.6

Working with the Layer Frame

The Layer frame allows the user to control how the map should be generated. A number of options are available in this frame to create a custom map.



1. The ArcIMS Developer can categorize layers in the Table of Contents to assist in locating specific datasets. These layer groups are shown in blue. Users can toggle entire categories of data by checking/unchecking the box behind the folder graphic.

2. To show or hide available layers in a group, the user can click on the folder graphic.

3. Available layers are listed under each category. To toggle individual layers, simply click on the checkbox in front of the layer name. If a magnifying glass is visible inside the checkbox, the layer is not visible at the current map scale. You many need to zoom in or zoom out to in order for this layer to become available.

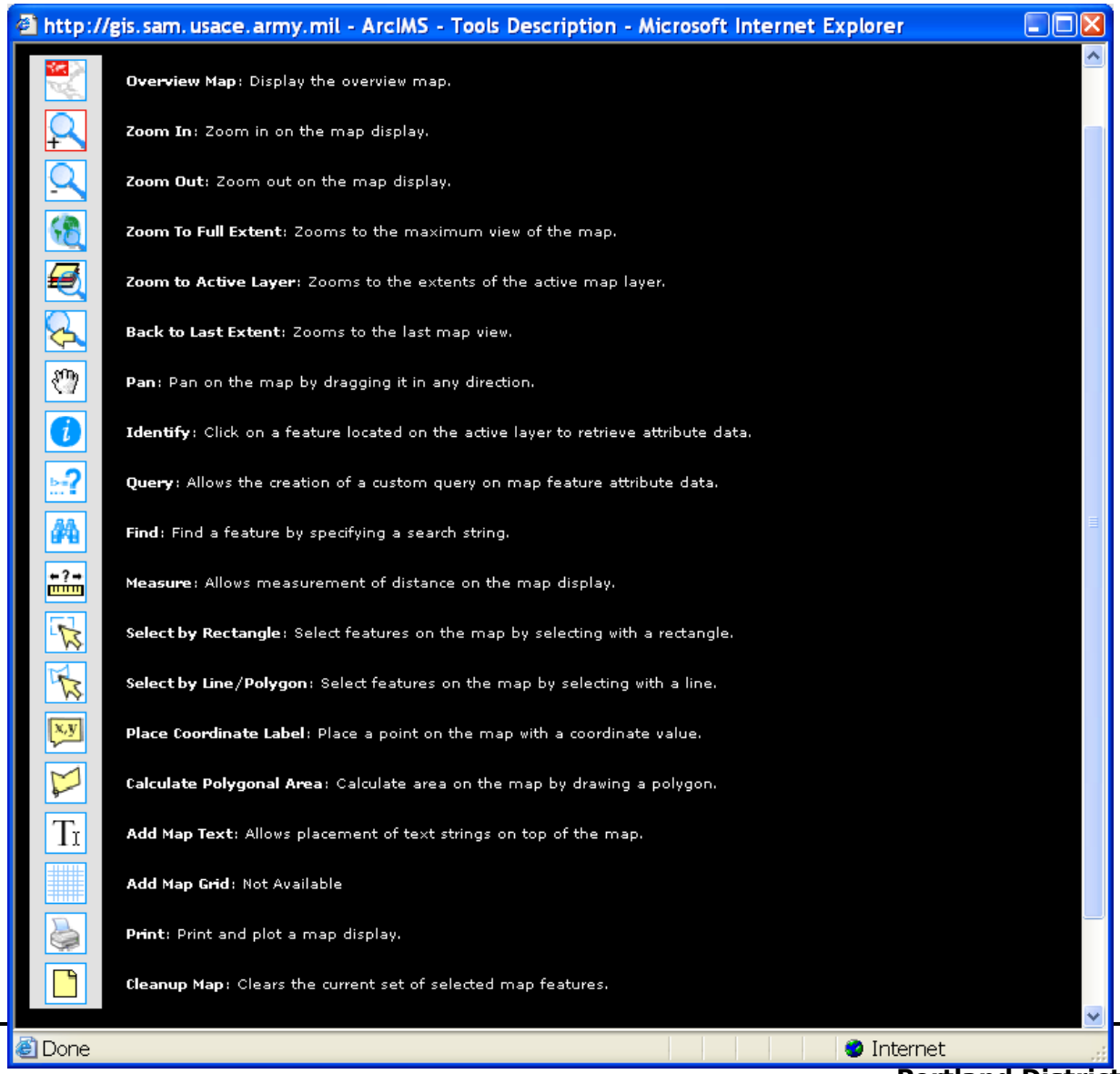
4. To set an Active Layer (active layers are required by some of the GIS Tools), click the circle in front of the Layer name. Only vector layers can be set as Active Layers.

5. To toggle the predefined label for the map layer, click the label tag graphic behind the layer name.

6. If the Auto Refresh option is selected, the mapping display is automatically redraw every time an action is completed in the Table of Contents. If you intend on toggling many layers, it is recommended to turn off this option.

   The Refresh Map button is provided to manually redraw the map. Therefore, once the user has selected all of the desired layers to toggle on the map, the Refresh Map button should be selected.

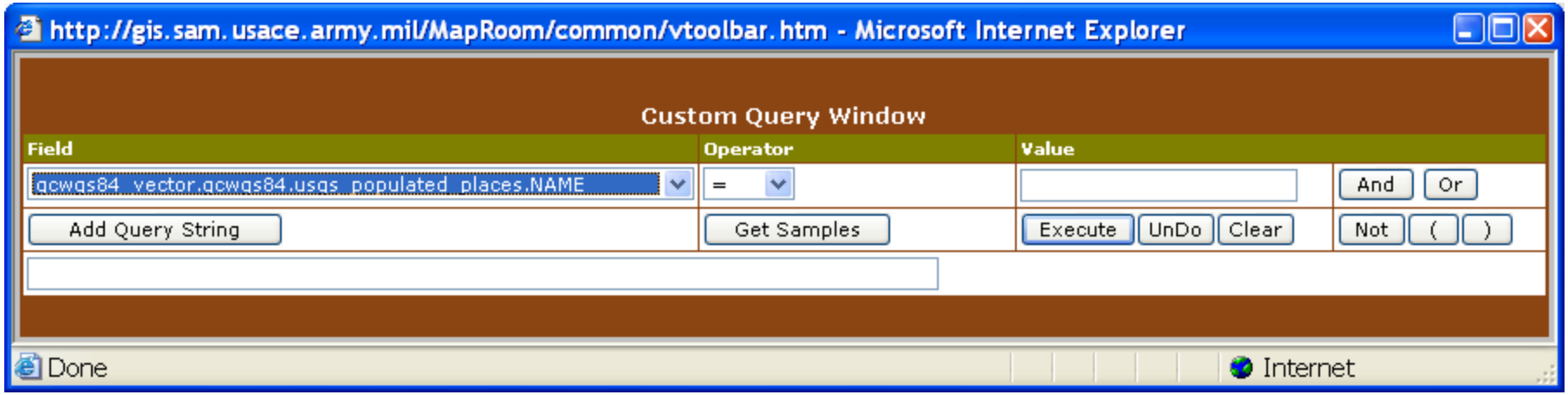
GIS Tools


http://gis.sam.usace.army.mil - ArcIMS - Tools Description - Microsoft Internet Explorer
Overview Map: Display the overview map.
Zoom In: Zoom in on the map display.
Zoom Out: Zoom out on the map display.
Zoom To Full Extent: Zooms to the maximum view of the map.
Zoom to Active Layer: Zooms to the extents of the active map layer.
Back to Last Extent: Zooms to the last map view.
Pan: Pan on the map by dragging it in any direction.
Identify: Click on a feature located on the active layer to retrieve attribute data.
Query: Allows the creation of a custom query on map feature attribute data.
Find: Find a feature by specifying a search string.
Measure: Allows measurement of distance on the map display.
Select by Rectangle: Select features on the map by selecting with a rectangle.
Select by Line/Polygon: Select features on the map by selecting with a line.
Place Coordinate Label: Place a point on the map with a coordinate value.
Calculate Polygonal Area: Calculate area on the map by drawing a polygon.
Add Map Text: Allows placement of text strings on top of the map.
Add Map Grid: Not Available
Print: Print and plot a map display.
Cleanup Map: Clears the current set of selected map features.
Done
Internet

Using the Query Window

The Query Windows allows you to create a custom attribute query on the ***Active Layer***.

1. After selecting an active layer, select the field name is which you want to query.
2. Select the desired **operator**: =, <> , <, >, etc.
3. Either click the **Get Samples** button, or type in a value for the query attribute (e.g. NAME = “NWP”). The And, Or, Not, (, and) buttons are provided to generate more complex queries.
4. Once all query options are selected, click the **Add Query String** button. This will generate the text required to perform the attribute query.
5. Click the **Execute** button to run the query.

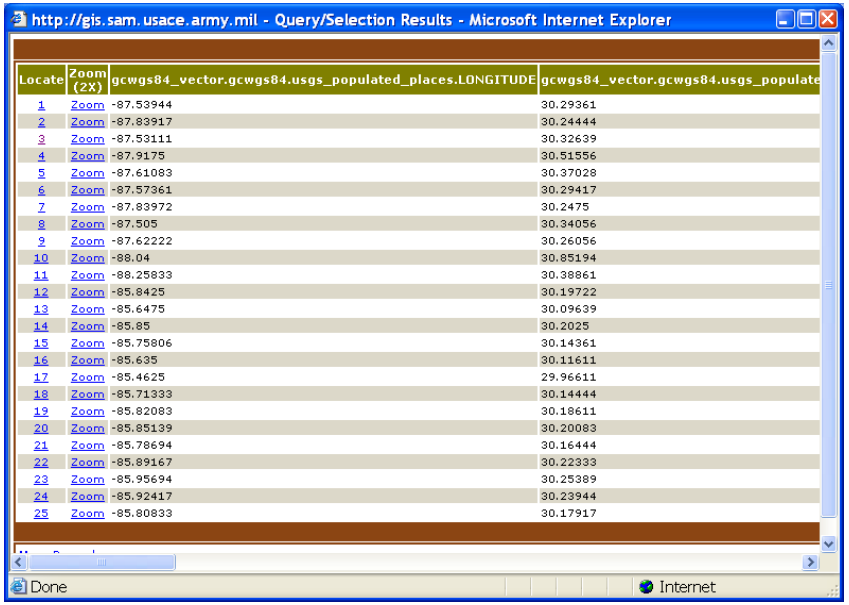


Using the Find Tool

The Find Tool is provided to allow quick query access to the **Populated Places** data layer. To use, simply type in the desired query string and click the **Find String** button. A window will appear with your search results and features will be selected in the mapping display.

To zoom to a desired record, click the **record number** in the Locate column. This will zoom you into the mapping display.

The **Zoom** hyperlink is provided to automatically zoom 2x in the mapping display for the selected record.



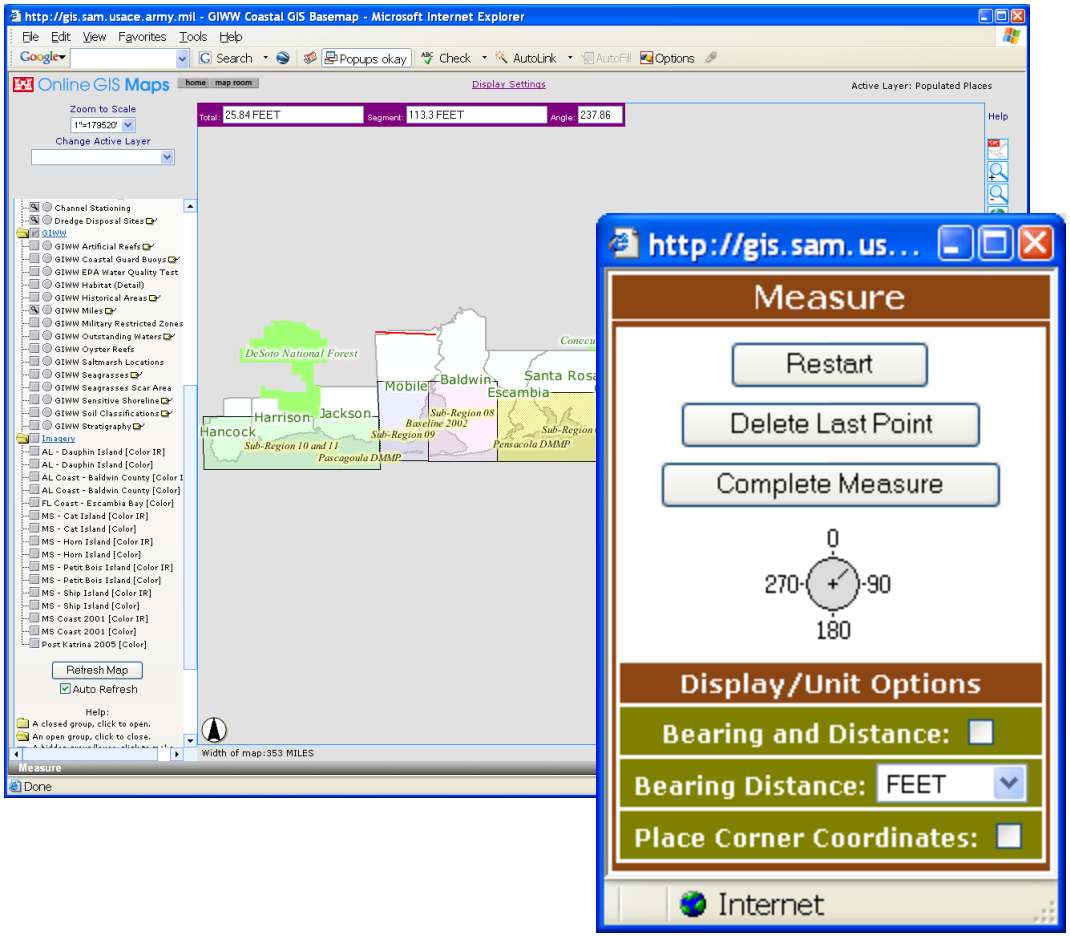
Locate	Zoom (2X)	gcwgs84_vector.gcwgs84.usgs_populated_places.LONGITUDE	gcwgs84_vector.gcwgs84.usgs_populate
1	Zoom	-87.53944	30.29361
2	Zoom	-87.83917	30.24444
3	Zoom	-87.53111	30.32639
4	Zoom	-87.9175	30.51556
5	Zoom	-87.61083	30.37028
6	Zoom	-87.57361	30.29417
7	Zoom	-87.83972	30.2475
8	Zoom	-87.505	30.34056
9	Zoom	-87.62222	30.26056
10	Zoom	-88.04	30.85194
11	Zoom	-88.25833	30.38861
12	Zoom	-85.8425	30.19722
13	Zoom	-85.6475	30.09639
14	Zoom	-85.85	30.2025
15	Zoom	-85.75806	30.14361
16	Zoom	-85.635	30.11611
17	Zoom	-85.4625	29.96611
18	Zoom	-85.71333	30.14444
19	Zoom	-85.82083	30.18611
20	Zoom	-85.85139	30.20083
21	Zoom	-85.78694	30.16444
22	Zoom	-85.89167	30.22333
23	Zoom	-85.95694	30.25389
24	Zoom	-85.92417	30.23944
25	Zoom	-85.80833	30.17917

Using the Measure Tool

The ArcIMS interface gives the user a number of options to perform simple spatial functions, such as measuring distances.

To start measuring distances on a the map, first select the Measure tool, then click on the mapping display to draw a line of measure. The units for the line of measure can be set using the **Display Setting** options.

The Measure window will automatically appear when the measure tool is selected. This provides the user with a few options for displaying the measured distance on the map, such as Show Bearing/Distance and Place Corner Coordinates.

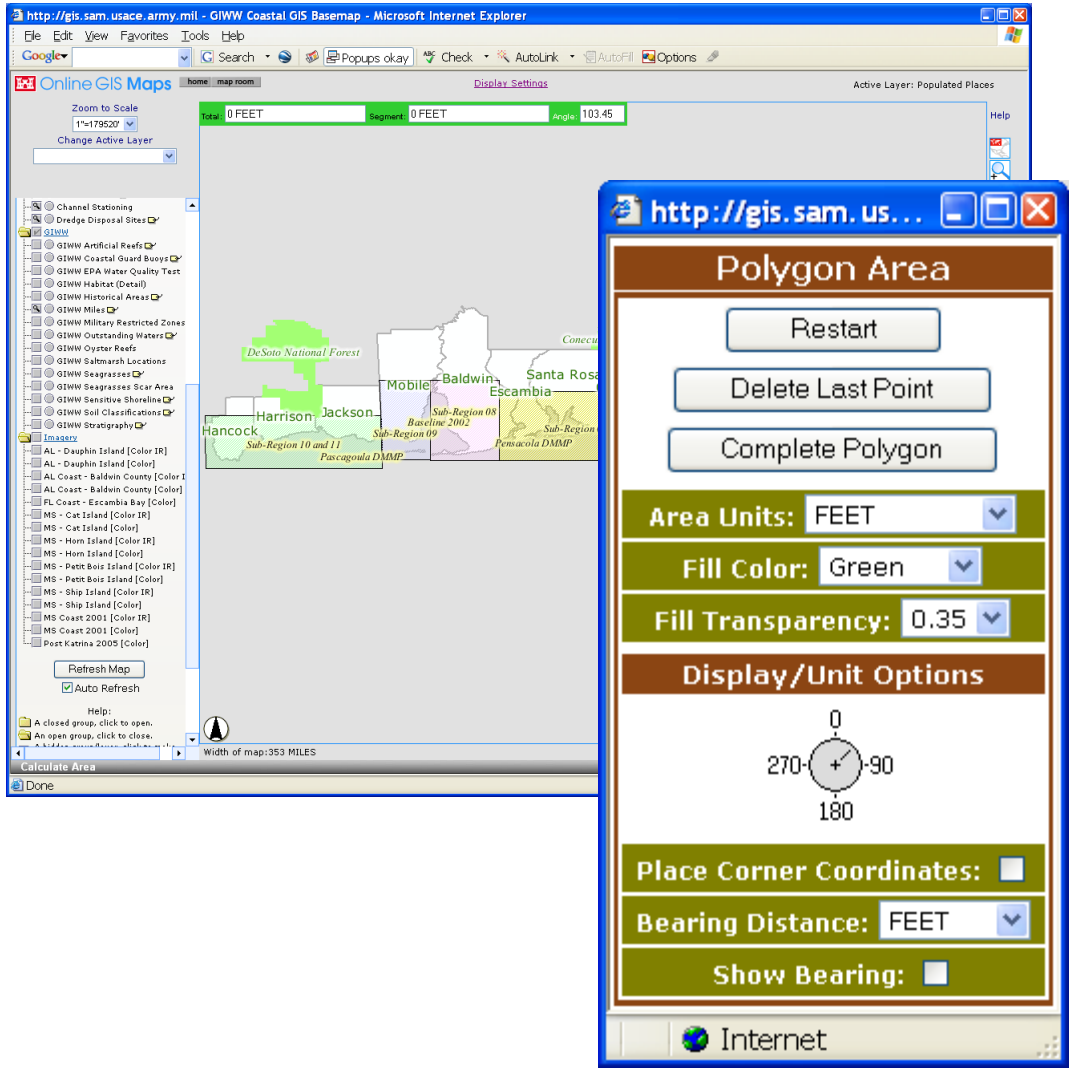


Using the Polygon Area Tool

Users can also calculate the area of a polygon by drawing a graphic in the mapping display.

Using similar options provided in the measure tool, the user can click on the mapping display to generate a polygon. In order to close the polygon and calculate the area, the **Complete Polygon** button must be selected. The desired calculated units can be select using the Area Units option.

The Fill Color and Fill Transparency options are provided set the graphic display options. Once a polygon is drawn on the map, the graphic and labels will persist until the map is cleared.



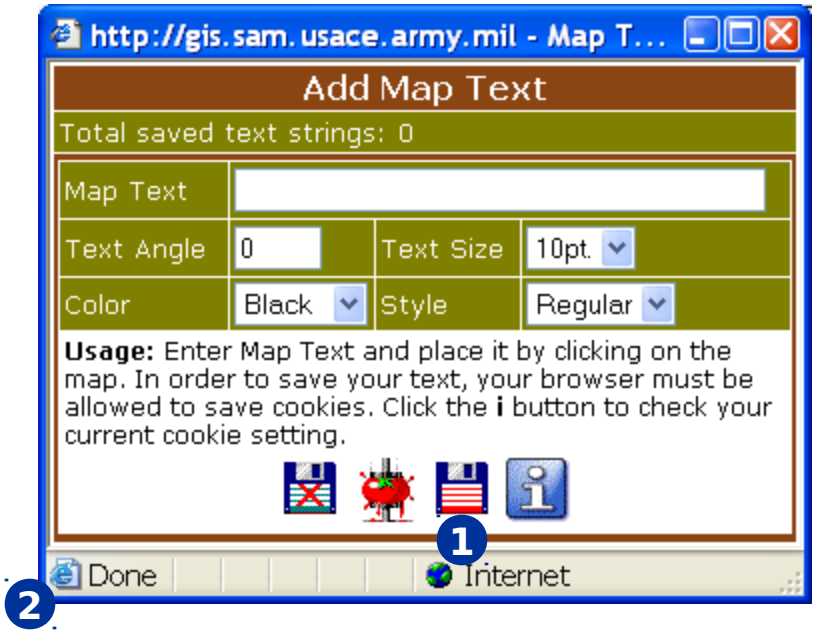
Adding Map Text

Mapping is a very important component for displaying GIS spatial datasets. To assist users in designing their custom map, the Add Map Text tool was created to allow users to add custom text to the mapping display.

Users can add a series of text strings to their map. Each map text can be added be added to the map by first entering the desired Map Text in the provided input box, entering a text angle (e.g., 45), text size, color and style. To place the text on the map, the user clicks on the preferred location on the map.

If the user decides to save text strings (using the Save, , button), at a later point the text string will only need to be selected, from the Map Text box, instead of typing in the entry again.

Note: Your browser must be set to Allow Cookies in order for this tool to work properly.

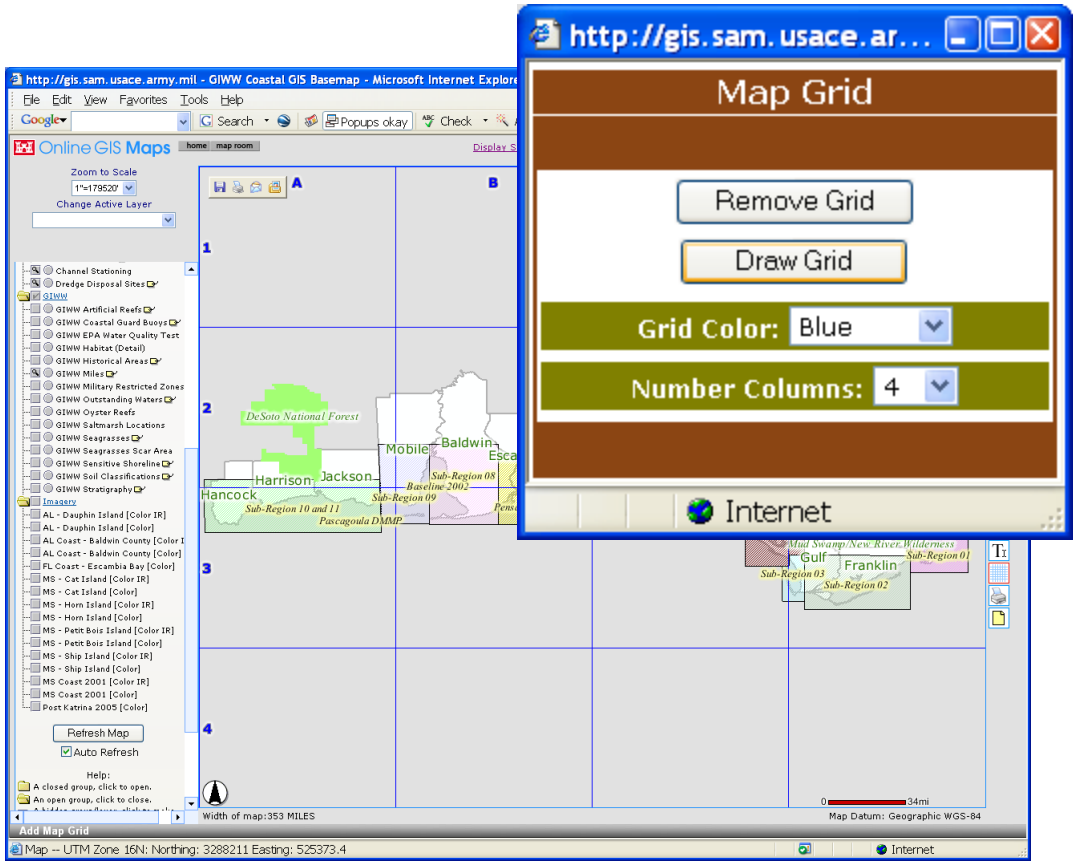


http://gis.sam.usace.army.mil - Map T...
Add Map Text
Total saved text strings: 2
Map Text
My House
2
Text Angle
0
Text Size
10pt.
Color
Black
Style
Regular
Usage: Enter Map Text and place it by clicking on the map. In order to save your text, your browser must be allowed to save cookies. Click the i button to check your current cookie setting. Your cookie will expire in 30 days.
Done
Internet

Drawing a Map Grid

A **Map Grid** tool is provided to allow the user to add a grid framework to the mapping display. Grids can assist the user in identifying areas of interest on a map.

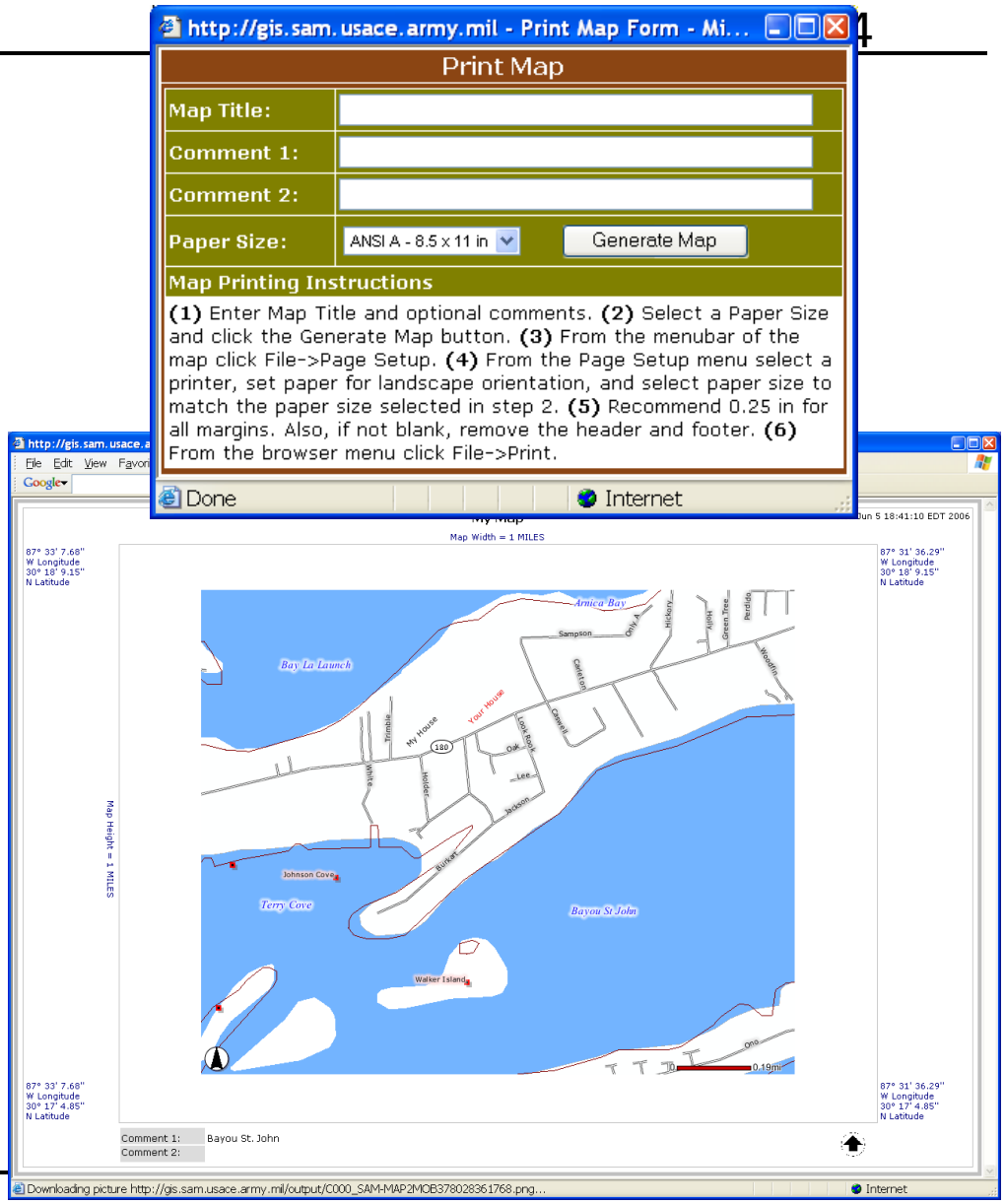
To add a grid on the map, select a **Grid Color** and **Number of** desired **Columns**. The number of rows will automatically be calculated to divide the map into equal sections.



Printing the Mapping Display

The ArcIMS interface allows the user to print a map, to scale, using the web mapping system. Using this tool, the basic map is produced using the contents of the mapping display.

This user can supply a Map Title and 2 Comments. The map can be formatted to fit up to an ANSI C plot. The plot that is automatically generated includes the title, comments, north area, scale, and corner coordinates.


http://gis.sam.usace.army.mil - Print Map Form - Mi...
Print Map
Map Title:
Comment 1:
Comment 2:
Paper Size:
ANSI A - 8.5 x 11 in
Generate Map
Map Printing Instructions
(1) Enter Map Title and optional comments. (2) Select a Paper Size and click the Generate Map button. (3) From the menubar of the map click File->Page Setup. (4) From the Page Setup menu select a printer, set paper for landscape orientation, and select paper size to match the paper size selected in step 2. (5) Recommend 0.25 in for all margins. Also, if not blank, remove the header and footer. (6) From the browser menu click File->Print.
Done
Internet
Map Width = 1 MILES
Map Height = 1 MILES
Bay La Launch
Arnica Bay
Johnson Cove
Terry Cove
Bayou St John
Walker Island
Comment 1: Bayou St. John
Comment 2: